

Please amend the above identified application as follows:

**IN THE CLAIMS:**

21. (Amended) An assembly suitable for investigation of a target environment to determine whether or in what amount a chemical species may be present, which comprises

(a) a substrate suitably configured for presenting a multiplicity of particles supported thereon to contact with said environment;

C1 (b) supported by said substrate, a multiplicity of particles in close-packed orientation, said particles having a core of conductive metal or conductive metal alloy, in each said particle such core being of 0.8 to 40.0 nm in maximum dimension, and deposited thereon a ligand, of thickness from 0.4 to 4.0 nm, which is capable of interacting with said species such that a property of said multiplicity of particles is altered; and

(c) a sensor for monitoring said property of said multiplicity of particles.

25. (Amended) An assembly suitable for investigating a target environment, to determine whether or in what amount a chemical species may be present, which comprises

(a) a substrate suitably configured for presenting a multiplicity of particles supported thereon to contact with said species;

C2 (b) supported by said substrate, said multiplicity of particles having a core of conductive metal or conductive metal alloy, in each said particle such core being of 0.8 to 40.0 nm in maximum dimension, and deposited thereon a ligand, of thickness from 0.4 to 4.0 nm, which is capable of interacting with said species such that the electrical conductivity of particles is altered;

(c) a pair of electrodes, each in electrical contact with said multiplicity of particles; and

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(d) a sensor for monitoring the electrical conductivity of said multiplicity of particles to determine whether there is, or the amount of, any change in said conductivity as an indication of whether or in what amount said species is present.

33. (Amended) A system suitable for investigating a target environment to determine whether or in what amount a chemical species may be present, which comprises

(a) a multiplicity of particles in close-packed orientation, said particles having a core of conductive metal or conductive metal alloy, in each said particle such core being of 0.8 to 40.0 nm in maximum dimension, and deposited thereon a ligand, of thickness from 0.4 to 4.0 nm, which is capable of interacting with said species such that a property of said multiplicity of particles is altered;

(b) means for exposing said multiplicity of particles to said environment;

(c) means for subjecting said multiplicity of particles to conditions sufficient for said property to be exhibited; and

(d) means for monitoring said property to determine whether there is, or the amount of, any change in such property as an indication of whether or in what amount said species is present.

34. (Amended) A system for investigating a target environment to determine whether or in what amount a chemical species may be present, which comprises

(a) a multiplicity of particles in close-packed orientation, said particles having a core of conductive metal or conductive metal alloy, in each said particle such core being of 0.8 to 40.0 nm in maximum dimension, and deposited thereon a ligand, of thickness from 0.4 to 4.0 nm, which is capable of interacting with said species such that the electrical resistivity of said multiplicity of particles is altered;

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- (b) means for exposing said multiplicity of particles to said environment;
  - (c) means for passing an electrical current through said multiplicity of particles; and
  - (d) means for monitoring the electrical resistivity of said multiplicity of particles to determine whether there is, or the amount of, any change in said resistivity as an indication of whether or in what amount said species is present.
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A marked-up version of the amended claims is included as Appendix A.

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